

IN THE CLAIMS

For the convenience of the Examiner, all pending and new claims of the present Application are shown below whether or not an amendment has been made. Please refer to any attached sheets showing a marked-up version of any amendments to the specification and claims.

1. A system capable of performing state-based signaling on behalf of a stateless client, comprising:

a controller, couplable to a state-based terminal, that translates at least one stateless signaling message received from said stateless client to at least one state-based signaling message for presentation to said state-based terminal thereby facilitating a media stream communications session between said stateless client and said state-based terminal using an Internet Protocol (IP)-based network, wherein the media stream communications session is comprised of packets exchanged between said stateless client and said state-based terminal.

2. The system as recited in Claim 1 wherein said controller translates at least one state-based signaling message received from said state-based terminal to at least one stateless signaling message for presentation to said stateless client.

3. The system as recited in Claim 1 wherein said controller comprises a protocol engine and a stateless client control engine.

4. The system as recited in Claim 1 wherein said controller forms an abstraction of said at least one stateless signaling message prior to translating.

5. The system as recited in Claim 1 wherein said system performs state-based signaling on behalf of a plurality of stateless clients.

6. The system as recited in Claim 1 wherein said media stream includes portions selected from the group consisting of:

voice,
video, and
data.

7. The system as recited in Claim 1 wherein portions of said media stream traverse a path between said stateless client and said state-based terminal without said controller.

8. The system as recited in Claim 1 wherein said at least one state-based signaling message and said at least one stateless signaling message traverse a signaling path separate from a path for said media stream.

9. The system as recited in Claim 1 wherein portions of said media stream traverse a path between said stateless client and said state-based terminal with said controller.

10. The system as recited in Claim 1 wherein said at least one state-based signaling message is based on a protocol selected from the group consisting of:

H.225,
H.235,
H.245, and
H.323.

11. The system as recited in Claim 1 wherein said stateless client is selected from the group consisting of a device having:

an individual telephone,
at least one digital trunk interface,
at least one analog trunk interface,
at least one digital station interface,
at least one analog station interface, and
a shared system resource.

12. The system as recited in Claim 1 wherein said at least one stateless signaling message includes an indication selected from the group consisting of:

- a telephony "off-hook" event,
- a telephony "on-hook" event,
- a telephony "button depressed" event,
- a telephony "digit dialed" event, and
- a "client registration" event.

14. The system as recited in Claim 1 wherein said controller operates only with respect to call management and management of said media stream.

15. The system as recited in Claim 1 wherein said system is embodied as a sequence of instructions executable in a general purpose computer system.

16. A method of performing state-based signaling on behalf of a stateless client, comprising the steps of:

translating at least one stateless signaling message received from said stateless client to at least one state-based signaling message for presentation to said state-based terminal thereby facilitating a media stream communications session between said stateless client and said state-based terminal using an Internet Protocol (IP)-based network, wherein the media stream communications session is comprised of packets exchanged between said stateless client and said state-based terminal.

17. The method as recited in Claim 16 further comprising the step of translating at least one state-based signaling message received from said state-based terminal to at least one stateless signaling message for presentation to said stateless client

18. The method as recited in Claim 16 further comprising the step of forming an abstraction of said at least one stateless signaling message prior to the step of translating.

19. The method as recited in Claim 16 wherein the method performs state-based signaling on behalf of a plurality of stateless clients.

20. The method as recited in Claim 16 wherein said media stream includes portions selected from the group consisting of:

voice,
video, and
data.

21. A system capable of performing state-based signaling on behalf of a stateless client, comprising:

a controller, couplable to a state-based terminal, that translates at least one state-based signaling message received from said state-based terminal to at least one stateless signaling message for presentation to said stateless client thereby facilitating a media stream communications session between said stateless client and said state-based terminal using an Internet Protocol (IP)-based network, wherein the media stream communications session is comprised of packets exchanged between said stateless client and said state-based terminal.

22. The system as recited in Claim 21 wherein said controller translates at least one stateless signaling message received from said stateless client to at least one state-based signaling message for presentation to said state-based terminal.

23. The system as recited in Claim 21 wherein said controller comprises a protocol engine and a stateless client control engine.

24. The system as recited in Claim 21 wherein said controller forms an abstraction of said at least one state-based signaling message prior to translating.

25. The system as recited in Claim 21 wherein said system performs state-based signaling on behalf of a plurality of stateless clients.

26. The system as recited in Claim 21 wherein said media stream includes portions selected from the group consisting of:

voice,
video, and
data.

27. The system as recited in Claim 21 wherein portions of said media stream traverse a path between said stateless client and said state-based terminal without said controller.

28. The system as recited in Claim 21 wherein said at least one state-based signaling message and said at least one stateless signaling message traverse a signaling path separate from a path for said media stream.

29. The system as recited in Claim 21 wherein portions of said media stream traverse a path between said stateless client and said state-based terminal with said controller.

30. The system as recited in Claim 21 wherein said at least one state-based signaling message is based on a protocol selected from the group consisting of:

H.225,
H.235,
H.245, and
H.323.

31. The system as recited in Claim 21 wherein said stateless client is selected from the group consisting of a device having:

an individual telephone,
at least one digital trunk interface,
at least one analog trunk interface,
at least one digital station interface,
at least one analog station interface, and
a shared system resource.

32. The system as recited in Claim 21 wherein said at least one stateless signaling message includes an indication selected from the group consisting of:

- a telephony "off-hook" event,
- a telephony "on-hook" event,
- a telephony "button depressed" event,
- a telephony "digit dialed" event, and
- a "client registration" event.

34. The system as recited in Claim 21 wherein said controller operates only with respect to call management and management of said media stream.

35. The system as recited in Claim 21 wherein said system is embodied as a sequence of instructions executable in a general purpose computer system.

36. A method of performing state-based signaling on behalf of a stateless client, comprising the steps of:

translating at least one state-based signaling message received from said state-based terminal to at least one stateless signaling message for presentation to said stateless client thereby facilitating a media stream communications session between said stateless client and said state-based terminal using an Internet Protocol (IP)-based network, wherein the media stream communications session is comprised of packets exchanged between said stateless client and said state-based terminal.

37. The method as recited in Claim 36 further comprising the step of translating at least one stateless signaling message received from said stateless client to at least one state-based signaling message for presentation to said state-based terminal.

38. The method as recited in Claim 36 further comprising the step of forming an abstraction of said at least one state-based signaling message prior to the step of translating.

39. The method as recited in Claim 36 wherein the method performs state-based signaling on behalf of a plurality of stateless clients.

40. The method as recited in Claim 36 wherein said media stream includes portions selected from the group consisting of:

voice,
video, and
data.

41. A system capable of performing state-based signaling on behalf of a stateless client, comprising:

a controller, couplable to a state-based terminal, that translates at least one stateless signaling message received from said stateless client to at least one state-based signaling message for presentation to said state-based terminal thereby facilitating a media stream communications session between said stateless client and said state-based terminal using a packet network, wherein the media stream communications session is comprised of packets exchanged between said stateless client and said state-based terminal.

42. The system as recited in Claim 41 wherein said controller translates at least one state-based signaling message received from said state-based terminal to at least one stateless signaling message for presentation to said stateless client.

43. The system as recited in Claim 41 wherein said controller comprises a protocol engine and a stateless client control engine.

44. The system as recited in Claim 41 wherein said controller comprises a call manager messaging interface and a stateless client messaging interface.

45. The system as recited in Claim 41 wherein said controller forms an abstraction of said at least one stateless signaling message prior to translating.

46. The system as recited in Claim 41 wherein said system performs state-based signaling on behalf of a plurality of stateless clients.

47. The system as recited in Claim 41 wherein said network employs a transport protocol selected from the group consisting of:

an Internet Protocol (IP),

an Internetwork Packet Exchange / Sequenced Packet Exchange (IPX/SPX), and

a Systems Network Architecture (SNA).

48. The system as recited in Claim 41 wherein portions of said media stream traverse a path between said stateless client and said state-based terminal without said controller.

49. The system as recited in Claim 41 wherein said at least one state-based signaling message and said at least one stateless signaling message traverse a signaling path separate from a path for said media stream.

50. The system as recited in Claim 41 wherein said system is embodied as a sequence of instructions executable in a general purpose computer system.

51. A method of performing state-based signaling on behalf of a stateless client, comprising the steps of:

translates at least one stateless signaling message received from said stateless client to at least one state-based signaling message for presentation to said state-based terminal thereby facilitating a media stream communications session between said stateless client and said state-based terminal using a packet network, wherein the media stream communications session is comprised of packets exchanged between said stateless client and said state-based terminal.

52. The method as recited in Claim 51 further comprising the step of translating at least one state-based signaling message received from said state-based terminal to at least one stateless signaling message for presentation to said stateless client.

53. The method as recited in Claim 51 further comprising the step of forming an abstraction of said at least one stateless signaling message prior to the step of translating.

54. The method as recited in Claim 51 wherein the method performs state-based signaling on behalf of a plurality of stateless clients.

55. The method as recited in Claim 51 wherein said network employs a transport protocol selected from the group consisting of:

- an Internet Protocol (IP),
- an Internetwork Packet Exchange/Sequenced Packet Exchange IPX/SPX), and
- a Systems Network Architecture (SNA).

56. A system capable of performing state-based signaling on behalf of a stateless client, comprising:

a controller, couplable to a state-based terminal, that translates at least one state-based signaling message received from said state-based terminal to at least one stateless signaling message for presentation to said stateless client thereby facilitating a media stream communications session between said stateless client and said state-based terminal using a packet network, wherein the media stream communications session is comprised of packets exchanged between said stateless client and said state-based terminal.

57. The system as recited in Claim 56 wherein said controller translates at least one stateless signaling message received from said stateless client to at least one state-based signaling message for presentation to said state-based terminal.

58. The system as recited in Claim 56 wherein said controller comprises a protocol engine and a stateless client control engine.

59. The system as recited in Claim 56 wherein said controller comprises a call manager messaging interface and a stateless client messaging interface.

60. The system as recited in Claim 56 wherein said controller forms an abstraction of said at least one state-based signaling message prior to translating.

61. The system as recited in Claim 56 wherein said system performs state-based signaling on behalf of a plurality of stateless clients.

62. The system as recited in Claim 56 wherein said network employs a transport protocol selected from the group consisting of:

an Internet Protocol (IP),

an Internetwork Packet Exchange/Sequenced Packet Exchange (IPX/SPX), and

a Systems Network Architecture (SNA).

63. The system as recited in Claim 56 wherein portions of said media stream traverse a path between said stateless client and said state-based terminal without said controller

64. The system as recited in Claim 56 wherein said at least one state-based signaling message and said at least one stateless signaling message traverse a signaling path separate from a path for said media stream.

65. The system as recited in Claim 56 wherein said system is embodied as a sequence of instructions executable in a general purpose computer system.

66. A method of performing state-based signaling on behalf of a stateless client, comprising the steps of: translating at least one state-based signaling message received from said state-based terminal to at least one stateless signaling message for presentation to said stateless client thereby facilitating a media stream communications session between said stateless client and said state-based terminal using a packet network, wherein the media stream communications session is comprised of packets exchanged between said stateless client and said state-based terminal.

67. The method as recited in Claim 66 further comprising the step of translating at least one stateless signaling message received from said stateless client to at least one state-based signaling message for presentation to said state-based terminal.

68. The method as recited in Claim 66 further comprising the step of forming an abstraction of said at least one state-based signaling message prior to the step of translating.

69. The method as recited in Claim 66 wherein the method performs state-based signaling on behalf of a plurality of stateless clients.

70. The method as recited in Claim 66 wherein said network employs a transport protocol selected from the group consisting of:

an Internet Protocol (IP),

an Internetwork Packet Exchange/Sequenced Packet Exchange (IPX/SPX), and

a Systems Network Architecture (SNA).

71. An Internet Protocol (IP)-based network, comprising: at least one state-based terminal capable of processing state-based signaling messages; at least one stateless client capable of processing only stateless signaling messages; and a server, couplable between said at least one state-based terminal and said at least one stateless client, comprising: a controller capable of performing state-based signaling on behalf of said at least one stateless client, including: a stateless client control engine that forms an abstraction of said at least one stateless signaling message received from said at least one stateless client; and a protocol engine that translates said abstraction to at least one state-based signaling message for presentation to said at least one state-based terminal thereby facilitating a media stream communications session between said at least one stateless client and said at least one state-based terminal, wherein the media stream communications session is comprised of packets exchanged between said stateless client and said state-based terminal.

72. The network as recited in Claim 71 wherein said protocol engine forms an abstraction of at least one state-based signaling message received from said at least one state-based terminal, said stateless client control engine translating said abstraction to at least one stateless signaling message for presentation to said at least one stateless client.

73. The network as recited in Claim 71 wherein said controller further comprises a call manager messaging interface and a stateless client messaging interface.

74. The network as recited in Claim 71 further comprising a gateway coupled between an intranet portion and an internet portion of said network.

75. The network as recited in Claim 71 wherein said controller is embodied as a sequence of instructions executable in a general purpose computer system.

76. An Internet Protocol (IP)-based network, comprising: at least one state-based terminal capable of processing state-based signaling messages; at least one stateless client capable of processing only stateless signaling messages; and a server, couplable between said at least one state-based terminal and said at least one stateless client, comprising: a controller capable of performing state-based signaling on behalf of said at least one stateless client, including: a protocol engine that forms an abstraction of said at least one state-based signaling message received from said at least one state-based terminal; and a stateless client control engine that translates said abstraction to at least one stateless signaling message for presentation to said at least one stateless client thereby facilitating a media stream communications session between said at least one stateless client and said at least one state-based terminal, wherein the media stream communications session is comprised of packets exchanged between said stateless client and said state-based terminal.

77. The network as recited in Claim 76 wherein said stateless client control engine forms an abstraction of at least one stateless signaling message received from said at least one stateless client, said protocol engine translating said abstraction to at least one state-based signaling message for presentation to said at least one state-based terminal.

78. The network as recited in Claim 76 wherein said controller further comprises a call manager messaging interface and a stateless client messaging interface.

79. The network as recited in Claim 76 further comprising a gateway coupled between an intranet portion and an internet portion of said network.

80. The network as recited in Claim 76 wherein said controller is embodied as a sequence of instructions executable in a general purpose computer system.

81. A method of performing state-based signaling on behalf of a stateless client, the method comprising the following steps:

receiving, from a stateless client, a first packet comprising a stateless signaling message;

translating the first packet into a second packet comprising a state-based signaling message; and

communicating the second packet to a state-based terminal, thereby facilitating a media stream communications session between the stateless client and the state-based terminal using a packet network.

82. The method as recited in Claim 81 wherein translating the first packet comprises:

forming an abstraction of the first packet; and

translating the abstraction of the first packet into the second packet.

83. The method as recited in Claim 81 wherein the second packet and the first packet traverse a packet based signaling path separate from a path for the media stream communications session.

84. The method as recited in Claim 81 wherein the method performs state-based signaling on behalf of a plurality of stateless clients.

85. The method as recited in Claim 81 wherein communicating the second packet employs a transport protocol selected from the group consisting of:

an Internet Protocol (IP),

an Internetwork Packet Exchange/Sequenced Packet Exchange (IPX/SPX), and

a Systems Network Architecture (SNA).

86. The method as recited in Claim 81 wherein receiving a first packet employs a transport protocol selected from the group consisting of:
an Internet Protocol (IP),
an Internetwork Packet Exchange/Sequenced Packet Exchange (IPX/SPX), and
a Systems Network Architecture (SNA).

87. Software for performing state-based signaling on behalf of a stateless client, the software being embodied in a computer-readable medium and when executed by a computer operable to:

receive, from a stateless client, a first packet comprising a stateless signaling message;
translate the first packet into a second packet comprising a state-based signaling message; and

communicate the second packet to a state-based terminal, thereby facilitating a media stream communications session between the stateless client and the state-based terminal using a packet network.

88. The software as recited in Claim 87 wherein translate the first packet comprises:

forming an abstraction of the first packet; and
translating the abstraction of the first packet into the second packet.

89. An apparatus for performing state-based signaling on behalf of a stateless client comprising:

means for receiving, from a stateless client, a first packet comprising a stateless signaling message;

means for translating the first packet into a second packet comprising a state-based signaling message; and

means for communicating the second packet to a state-based terminal, thereby facilitating a media stream communications session between the stateless client and the state-based terminal using a packet network.

90. The apparatus as recited in Claim 89 wherein translating the first packet comprises:

forming an abstraction of the first packet; and
translating the abstraction of the first packet into the second packet.

91. A method for establishing a communications session with a remote state-based terminal, the method comprising the following steps performed at a stateless client:

receiving a call initiation signaling message generated at a remote state-based terminal and translated into a stateless call initiation signaling message for presentation to the stateless client to establish a communications session between the stateless client and the remote state-based terminal;

processing the stateless call initiation signaling message to determine that the stateless client is able to conduct the communications session initiated at the remote state-based terminal;

communicating a stateless acknowledgement signaling message for translation and delivery to the remote state-based terminal as a state-based acknowledgement signaling message; and

exchanging packets with the remote state-based terminal using a packet network.

92. The method as recited in Claim 91, wherein the method employs a transport protocol selected from the group consisting of:

an Internet Protocol (IP),

an Internetwork Packet Exchange / Sequenced Packet Exchange (IPX/SPX), and

a Systems Network Architecture (SNA).

93. The method as recited in Claim 91, wherein receiving a call initiation signaling message generated at a remote state-based terminal and translated into a stateless call initiation signaling message for presentation to the stateless client comprises receiving the call initiation signaling message from a stateless client control engine that receives an abstraction of the state-based signaling message from a state-based protocol engine and translates the abstraction of the state-based signaling message into the stateless call initiation signaling message.

94. The method as recited in Claim 91, wherein the stateless call initiation signaling message comprises a packet based telephony "Set Ringer On" message.

95. The method as recited in Claim 91, wherein the stateless acknowledgement signaling message comprises a packet based telephony "Station Off Hook" message.

96. The method as recited in Claim 91, wherein the state-based acknowledgement signaling message comprises a packet based H.225 Connect message.

97. The method as recited in Claim 91, wherein:
the remote state-based terminal comprises a computer executing telephony software that supports the H.323 protocol; and
the stateless client comprises an Internet Protocol (IP) device comprising a handset, wherein the device is operable to translate packets into voice information for presentation to a user and to generate packets from received voice activity of the user for presentation to the remote state-based terminal.

98. The method as recited in Claim 91, further comprising:
receiving a plurality of first packets generated at the remote state-based terminal for presentation to the stateless client;
translating the received first packets into voice information for presentation to a user of the stateless client;
receiving voice activity from the user;
generating a plurality of second packets that represent the voice activity; and
communicating the generated second packets for delivery to the remote state-based terminal.

99. A method for establishing a communications session between a remote state-based terminal and a stateless client, the method comprising the following steps performed at the stateless client:

receiving an indication to initiate a communications session between a stateless client and a remote state-based terminal using a packet based network;

communicating a stateless call initiation signaling message for translation and delivery to a remote state-based terminal as a state-based call initiation signaling message to establish the communications session between the stateless client and the remote state-based terminal;

receiving an acknowledgement signaling message generated at the remote state-based terminal and translated into a stateless acknowledgment signaling message for presentation to the stateless client; and

exchanging packets with the remote state-based terminal using a packet network.

100. The method as recited in Claim 99, wherein the method employs a transport protocol selected from the group consisting of:

an Internet Protocol (IP),

an Internetwork Packet Exchange / Sequenced Packet Exchange (IPX/SPX), and

a Systems Network Architecture (SNA).

101. The method as recited in Claim 99, wherein communicating a stateless call initiation signaling message for translation and delivery to a remote state-based terminal as a state-based call initiation signaling message comprises communicating the stateless call initiation signaling message to a stateless client control engine, wherein the stateless client control engine:

forms an abstraction of the stateless call initiation signaling message; and

communicates the abstraction of the stateless call initiation signaling message to a state-based protocol engine, wherein the state-based protocol engine translates the abstraction of the stateless call initiation signaling message into the state-based signaling message for presentation to the state-based terminal.

102. The method as recited in Claim 99, wherein receiving an acknowledgement signaling message generated at the remote state-based terminal and translated into a stateless acknowledgment signaling message for presentation to the stateless client comprises receiving the acknowledgement signaling message from a stateless client control engine, wherein the stateless client control engine:

receives an abstraction of a state-based acknowledgment signaling message from a state-based protocol engine, wherein the state-based protocol engine forms the abstraction from the state-based acknowledgment signaling message communicated from the state-based terminal; and

translates the abstraction of the state-based acknowledgment signaling message into the stateless acknowledgment signaling message.

103. The method as recited in Claim 99, wherein:

the remote state-based terminal comprises a computer executing telephony software that supports the H.323 protocol; and

the stateless client comprises an Internet Protocol (IP) device comprising a handset, wherein the device is operable to translate packets into voice information for presentation to a user and to generate packets from received voice activity of the user for presentation to the remote state-based terminal.

104. The method as recited in Claim 99, further comprising:
receiving a plurality of first packets generated at the remote state-based terminal for presentation to the stateless client;
translating the received first packets into voice information for presentation to a user of the stateless client;
receiving voice activity from the user;
generating a plurality of second packets that represent the voice activity; and
communicating the generated second packets for delivery to the remote state-based terminal.

105. The method as recited in Claim 99, wherein receiving an indication to initiate a communications session comprises receiving an off-hook signal in response to a user indicating a desire to establish a communications session.
